statement that the apostrophe of the genitive indicates the omission of an *e* (p. 112) is quite unhistorical.

But no one can overlook the merits of the book. They are great; they are fundamental; they are positive. The arrangement is clear and illuminating. First sentence, then the complete subject, ditto predicate, the phrase, the clause; then, and not till then, the parts of speech; after this the accidence; finally syntax, not "false syntax," not arachnid syntax or catacombs syntax, but a brief, fresh, incisive account of important English idioms. Throughout the basis is sentence-analysis, and the emphasis is laid on function. The examples are unhackneyed and often taken in series from some school classic. The exercises are never mechanical or perfunctory. Everywhere is manifest an unerring instinct for what is essential and worth while. As a result of all this the student can never lose sight of the reasons for the study of grammar, or interest in the study itself.

The temper, too, is admirable. Nothing of Lindley Murray or Richard Grant White. Whatever the opinion expressed on any disputed usage, the manner of statement, the open-mindedness and tact, are most winning, and that in a subject where winning is of first-rate consequence. It is on this account especially that the book must be very frankly accepted as a genuine contribution to the pedagogy of English—and the pedagogical armory of textbooks.

GUIDO H. STEMPEL

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The Analysis of Racial Descent in Animals. By THOMAS H. MONTGOMERY, JR. New York: Henry Holt & Co., 1906. Pp. xi+311. $2.50.

Anything from the pen of a man as prominent and active in the zoölogical world as Professor Montgomery should command the attention of every teacher of biology. This large volume is a general and comprehensive work on the methods of determining racial descent in animals. The phenomena to be explained are numerous and complex, and therefore rather uncertain in results; but the consideration of them often leads to many of the broader concepts of biology. Some of the author's conclusions may indicate more clearly than anything else the extent and contents of the book.

He decides in the first chapter that "the sea beach from the regions of high tidal limit to a short distance below the low tidal is the probable point of origin of most animal groups." The second chapter treats of the germ plasm, the behavior of chromosomes, and the part they play in heredity. Farther on the author concludes that the male is morphologically and physiologically inferior to the female; that variation and mutation are instituted by stimulus of the environment; that transmutations are definitely directed and may be discontinuous by means of mutations, or continuous by means of variation; that certain kinds of acquired characters are inherited; that embryology does not furnish any recapitulation of the phylogeny, and an analysis of the stages during the life of one individual can in no way present a knowledge of its ancestry; that end stages in the ontogeny are more important than any other stages, leading to the conclusion

that the group Chordata is inadmissible because tunicates, Amphioxus, and vertebrates are very unlike in the adult condition; and that, just as one cell gives rise to others by division, so one organ produces others by division.

Every teacher and advanced student of biology should become acquainted with the views of an author who has studied so many and widely separated biological phenomena.

ROBERT W. HEGNER

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A Laboratory Course in Physics. By R. A. MILLIKAN and H. G. GALE. Boston: Ginn & Co., 1906. Pp. x+134.

This laboratory manual is intended to accompany Millikan & Gale's classroom text, *A First Course in Physics,* although it is stated that the manual may be used independently if desired. Directions are given for performing fifty-one experiments. Appendices give a suggested time-schedule for a one-year course in physics, and a list of the apparatus used together with the cost of the same. The experiments and apparatus are the outcome of three years' trial and improvement in high-school and university courses.

The book is of convenient size, clearly printed, and well supplied with illustrative diagrams. Many of the experiments are original and show a decided departure from those described in older texts. There is a well-defined attempt to simplify the methods and apparatus so that the pupil may grasp the physical principle without getting lost in manipulating details. Suggestive questions are inserted to help attain this object.

A possible objection to the proposed course lies in the introduction of the vernier and the micrometer caliper. The use of these instruments seems contrary to the authors' attempt to avoid the "creeping-over of the methods and the instruments of research and specialization from the university into the high school, where they have absolutely no place." The same objection might be urged against the use of per cent. errors and discussion of accuracy of measurements.

Altogether the book is to be commended, not only for its improvements over older manuals, but also as part of a *completed* and *tried* course. The fact that a complete set of apparatus for the course may be bought for a reasonable amount is an additional commendation.

F. R. WATSON

UNIVERSITY OF ILLINOIS

BOOKS RECEIVED

(The notice here given does not preclude the publishing of a comprehensive review.)

EDUCATION

Composition in the Elementary Schools. By JOSEPH S. TAYLOR. New York: A. S. Barnes & Co., 1906. Pp. 207.

Hints and Helps from Many School-rooms: Successful Plans and Devices Contributed by 150 Teachers Who Have Used Them in Their Schools.